

Core Problems Reported by Students in a Palm OS and Internet-Based Problem Entry System Predicts Performance on the Third-Year Internal Medicine Clerkship

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Background:

CWeblog is a web and palm OS-based system used by medical students to record the problems and diagnoses of patients encountered in third-year clerkships at the Uniformed Services University. Data is available for analysis by clerkship directors as soon as it is entered. A pretest is given on the first day of the internal medicine third-year clerkship (the clerkship), and the National Board of Medical Examiners shelf examination (NBME) is given during the final twelfth week. Internal medicine specialty societies publish a list of 20 core problems in internal medicine to be emphasized during the third-year clerkship.

Methods:

We downloaded cWeblog entries from students completing the clerkship during the first two quarters of 2002/2003. 81 of 87 students completing the clerkship (93%) entered data into cWeblog. Ten students entered data from one half of the clerkship and were dropped from analysis. Two students were dropped from analysis because they entered less than 50% of the minimum expected number of patients. The final database consisted of 69 students.

Results:

On average, students reported that they had encountered 14.3 of the 20 core problems (range 7 to 19). As expected, students with higher pretest scores scored higher on the 100-point NBME examination. In linear regression adjusted for pretest score, reporting one more core problem was associated with a significant 0.49-point increase in NBME score ($p = 0.036$; 95% CI: 0.03, 0.94). Six more core problem entries would result in a moderate effect size of 0.5 standard deviations.

Discussion:

The cWeblog problem entry and data retrieval system enabled clerkship directors to evaluate data that would have otherwise been difficult to obtain and interpret. The more core problems a student reported, the better the student scored on the NBME examination. This could represent selection bias, as stronger students might be more conscientious about entering problems into cWeblog. However, after adjustment for student ability as measured by the pretest score, the number of core problems reported remained a significant predictor of NBME score. These findings have face validity, as students reporting greater exposure to the core problems in internal medicine augmented their knowledge base to a greater degree.